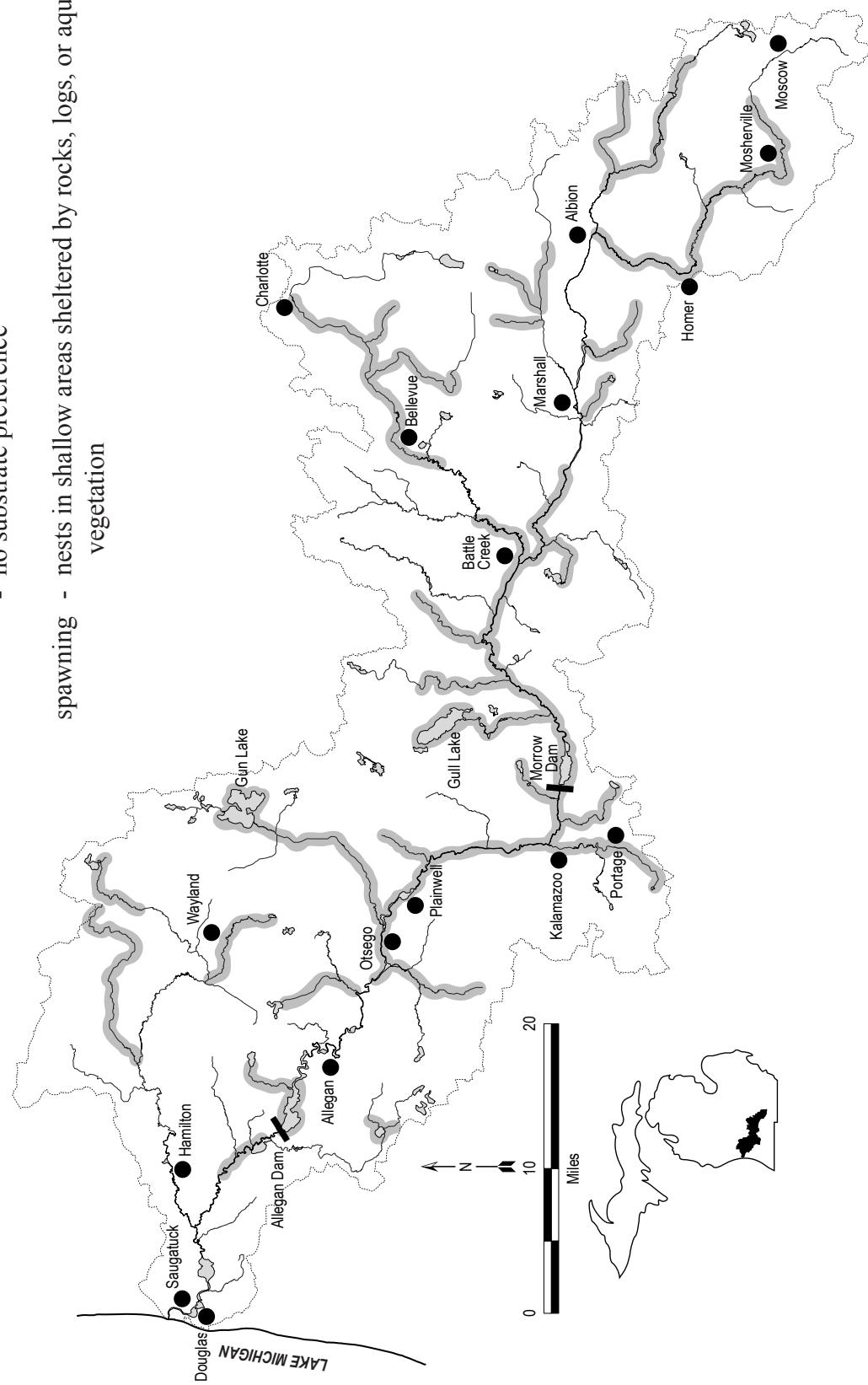


**Green sunfish (*Lepomis cyanellus*)**

**Habitat:**

- feeding - impoundments and lakes, and low-current streams and rivers
  - no substrate preference

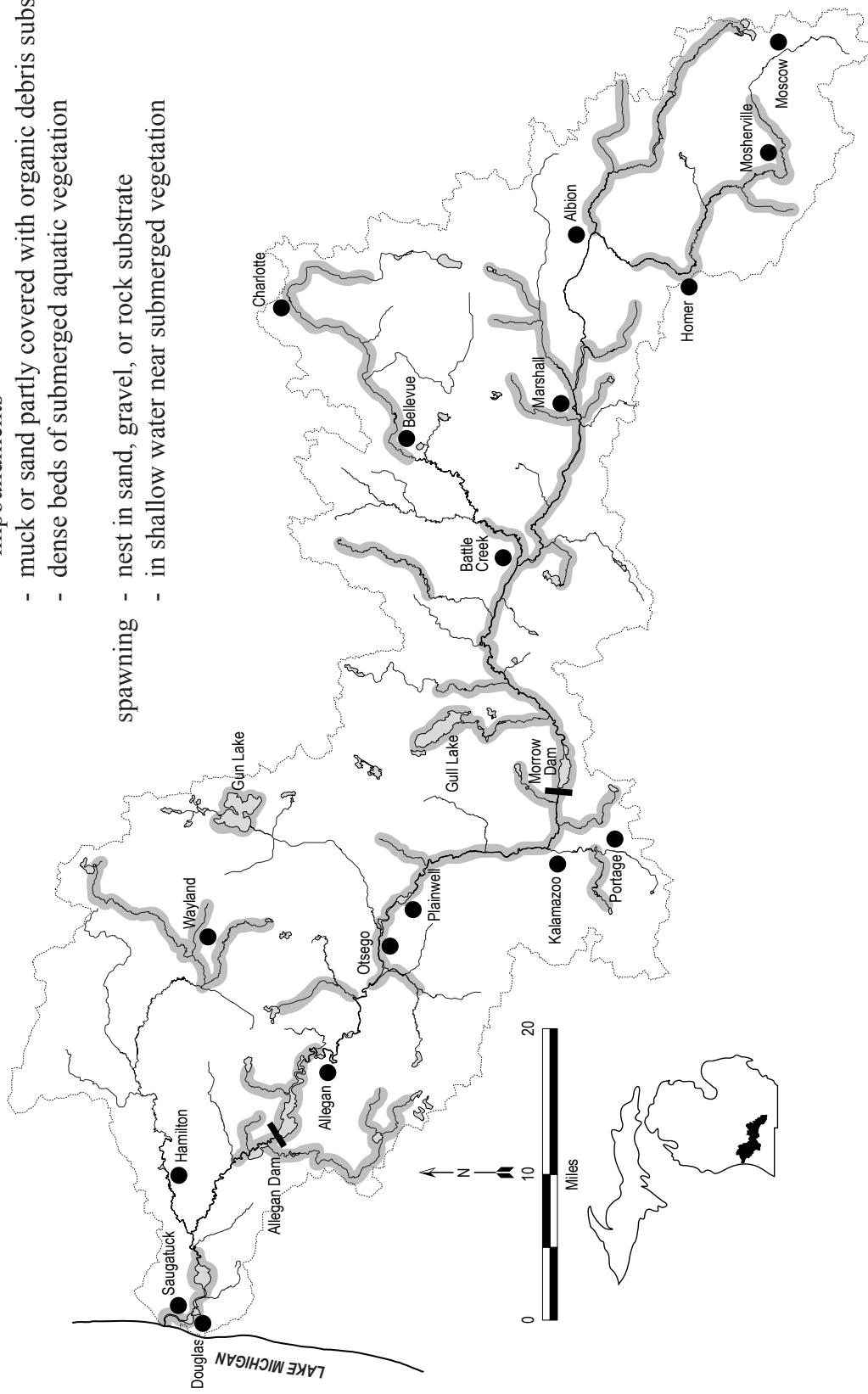
- spawning - nests in shallow areas sheltered by rocks, logs, or aquatic vegetation



Pumpkinseed sunfish (*Lepomis gibbosus*)

Habitat:

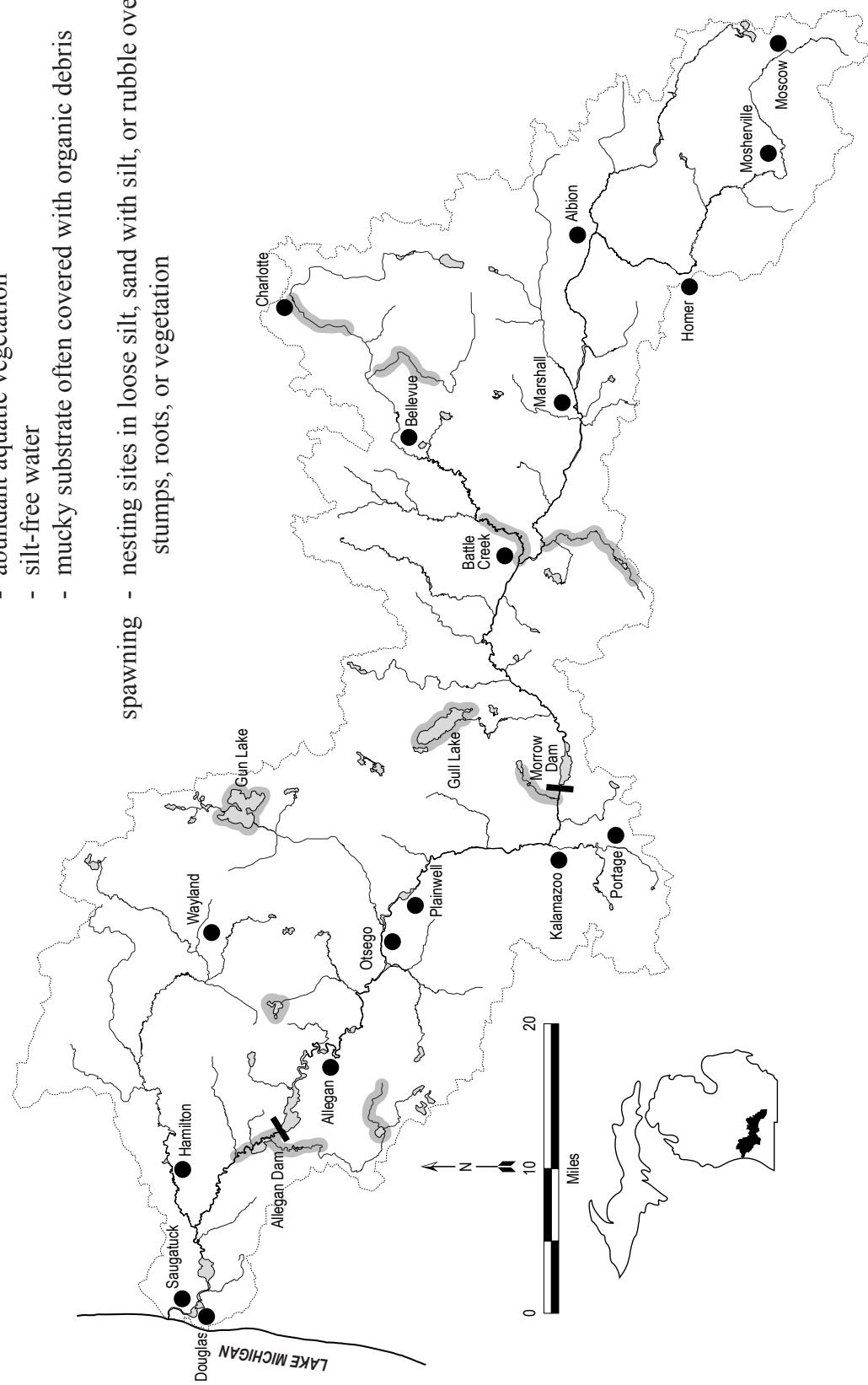
- feeding - non-flowing clear water in streams and rivers; also lakes and impoundments
- muck or sand partly covered with organic debris substrate
  - dense beds of submerged aquatic vegetation
- spawning - nest in sand, gravel, or rock substrate
- in shallow water near submerged vegetation



**Warmouth (*Lepomis gulosus*)**

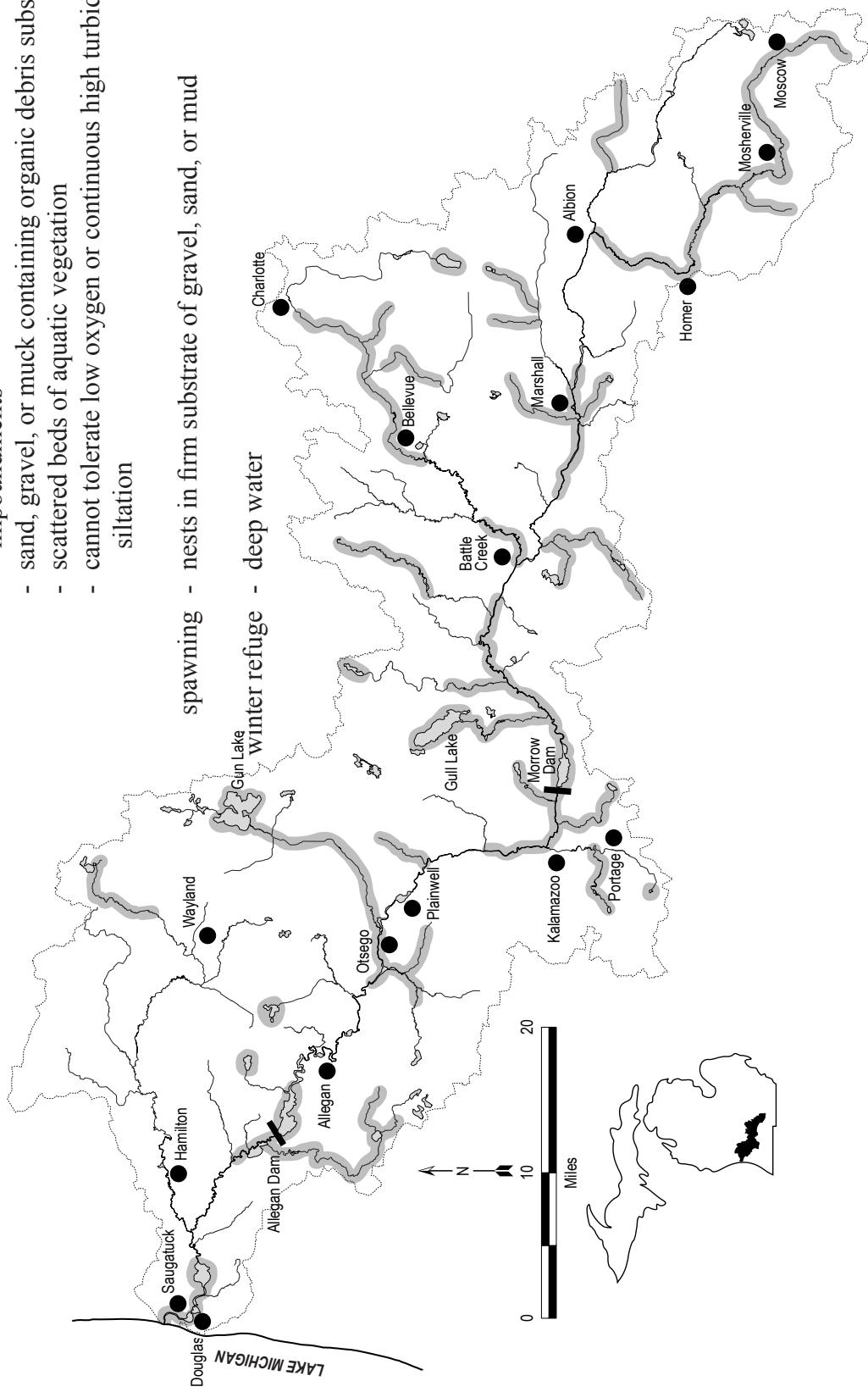
**Habitat:**

- feeding - clear lakes and impoundments and very low-gradient streams
- abundant aquatic vegetation
  - silt-free water
  - mucky substrate often covered with organic debris
- spawning - nesting sites in loose silt, sand with silt, or rubble over silt near stumps, roots, or vegetation



**Bluegill (*Lepomis macrochirus*)**

- Habitat:**
- feeding - non-flowing clear streams and rivers; also lakes and impoundments
    - sand, gravel, or muck containing organic debris substrate
    - scattered beds of aquatic vegetation
    - cannot tolerate low oxygen or continuous high turbidity and siltation
  - spawning - nests in firm substrate of gravel, sand, or mud

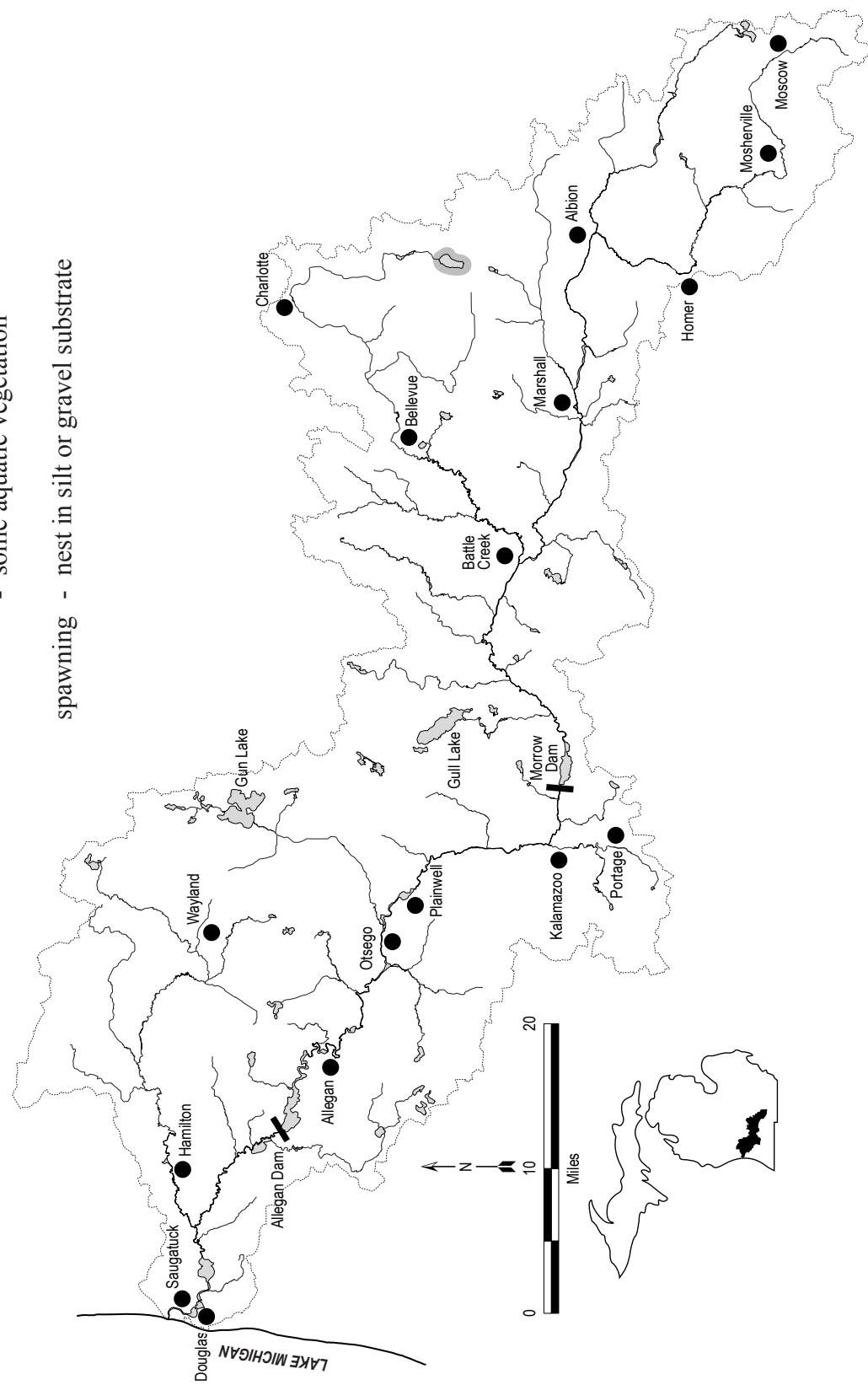


**Redear sunfish (*Lepomis microlophus*)**

**Habitat:**

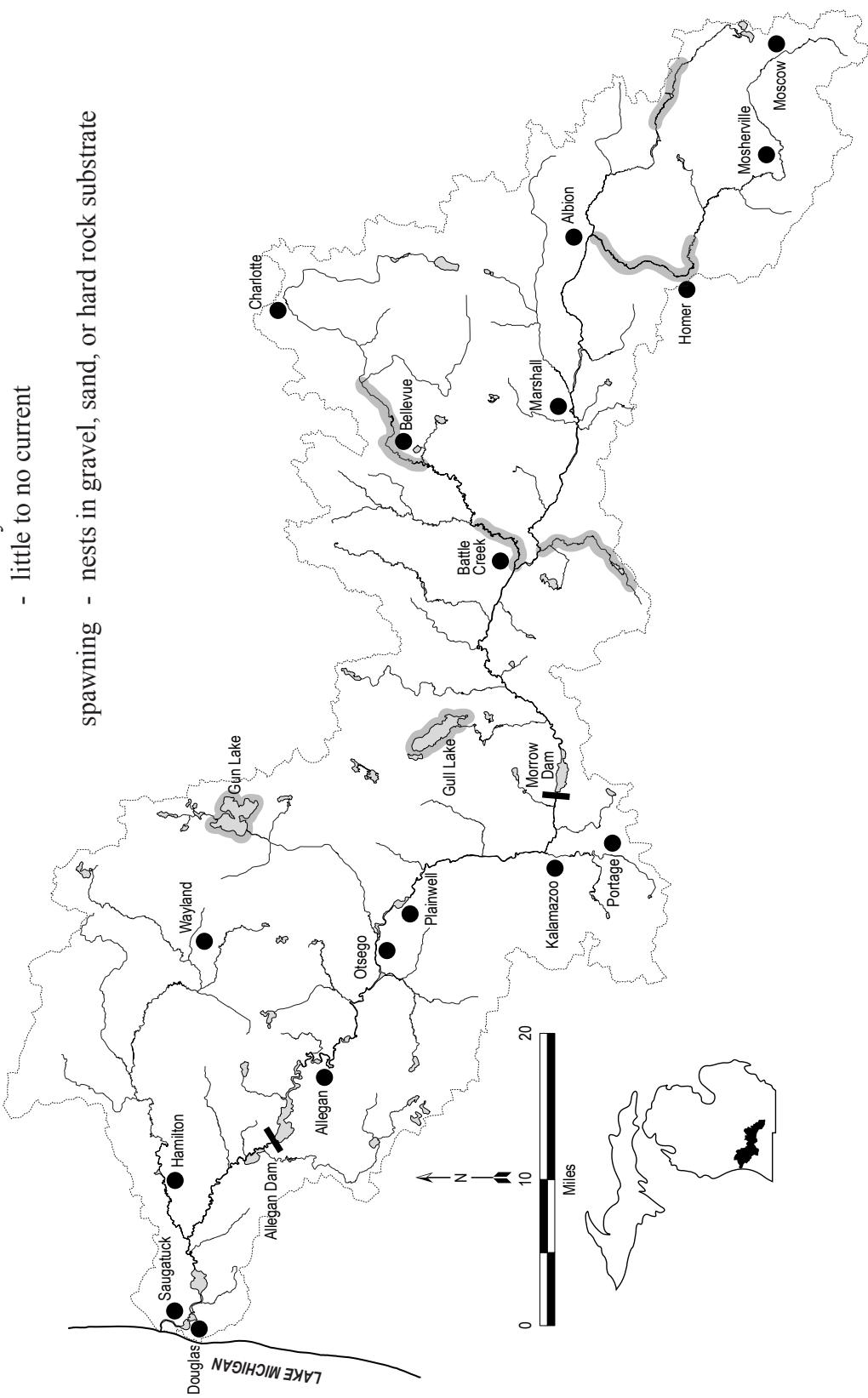
- feeding - non-flowing clear waters of streams and lakes
- some aquatic vegetation

spawning - nest in silt or gravel substrate



**Northern longear sunfish (*Lepomis peltastes*)**

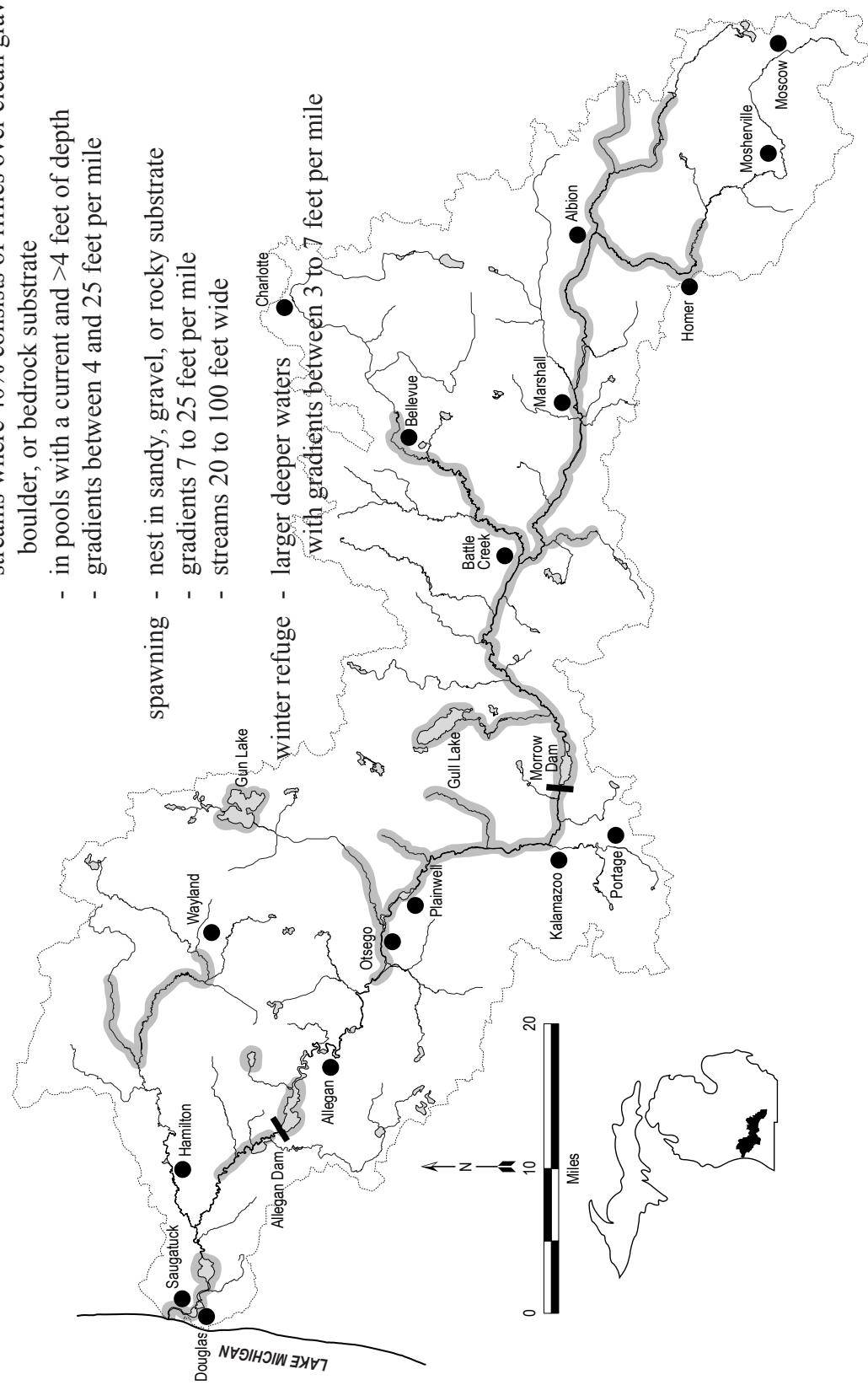
- Habitat:**
- feeding - clear moderate-sized shallow streams with moderate vegetation
    - rocky substrates
    - little to no current
  
  - spawning - nests in gravel, sand, or hard rock substrate



**Smallmouth bass (*Micropterus dolomieu*)**

**Habitat:**

- feeding
  - clear, cool, deep lakes and rivers
  - streams where 40% consists of riffles over clean gravel, boulder, or bedrock substrate
  - in pools with a current and >4 feet of depth
  - gradients between 4 and 25 feet per mile
  
- spawning
  - nest in sandy, gravel, or rocky substrate
  - gradients 7 to 25 feet per mile
  - streams 20 to 100 feet wide
  
- winter refuge
  - larger deeper waters with gradients between 3 to 7 feet per mile

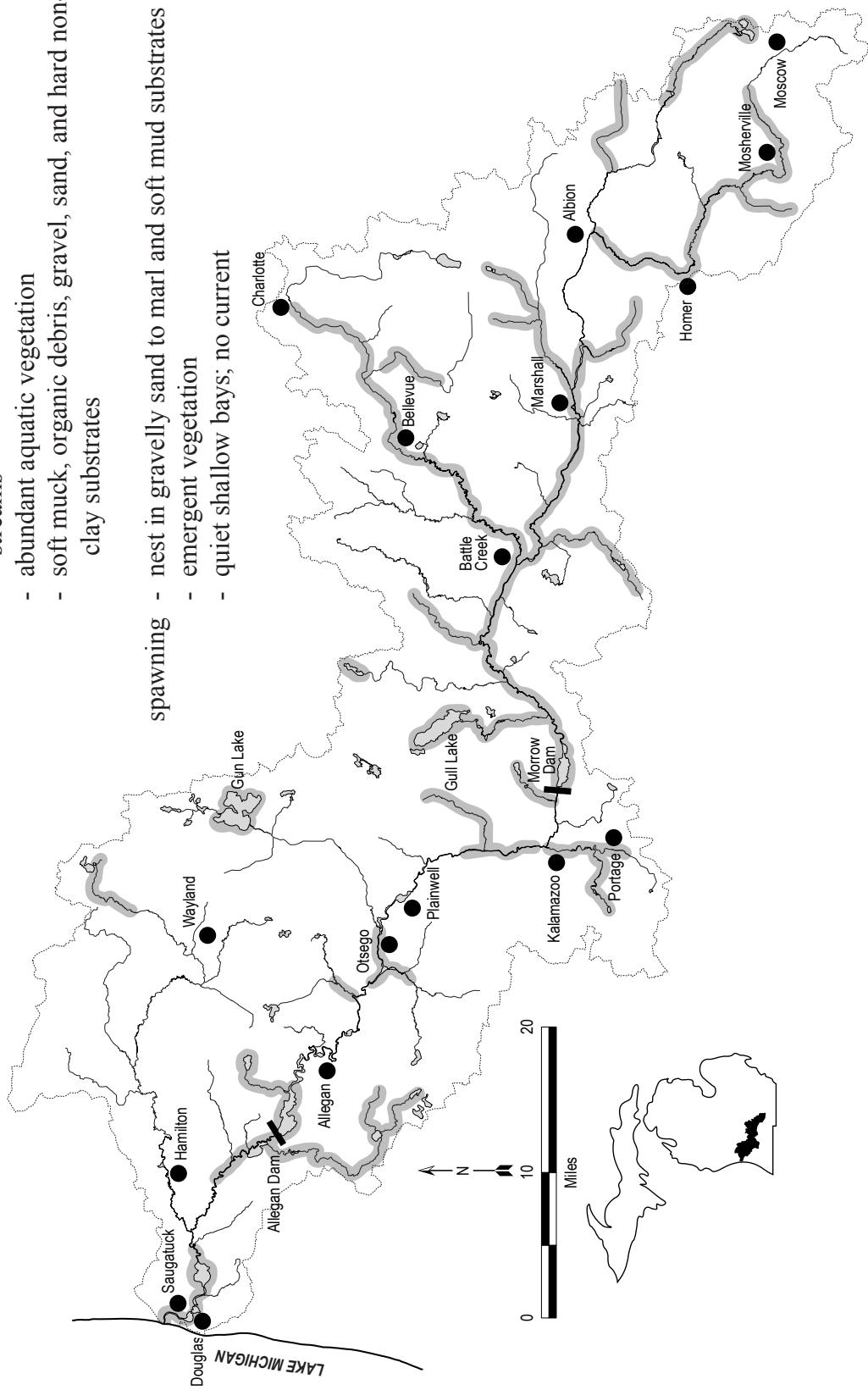


### Largemouth bass (*Micropterus salmoides*)

**Habitat:**

- feeding - non-flowing clear waters - lakes, impoundments, and pools of streams
- abundant aquatic vegetation
  - soft muck, organic debris, gravel, sand, and hard non-flocculent clay substrates

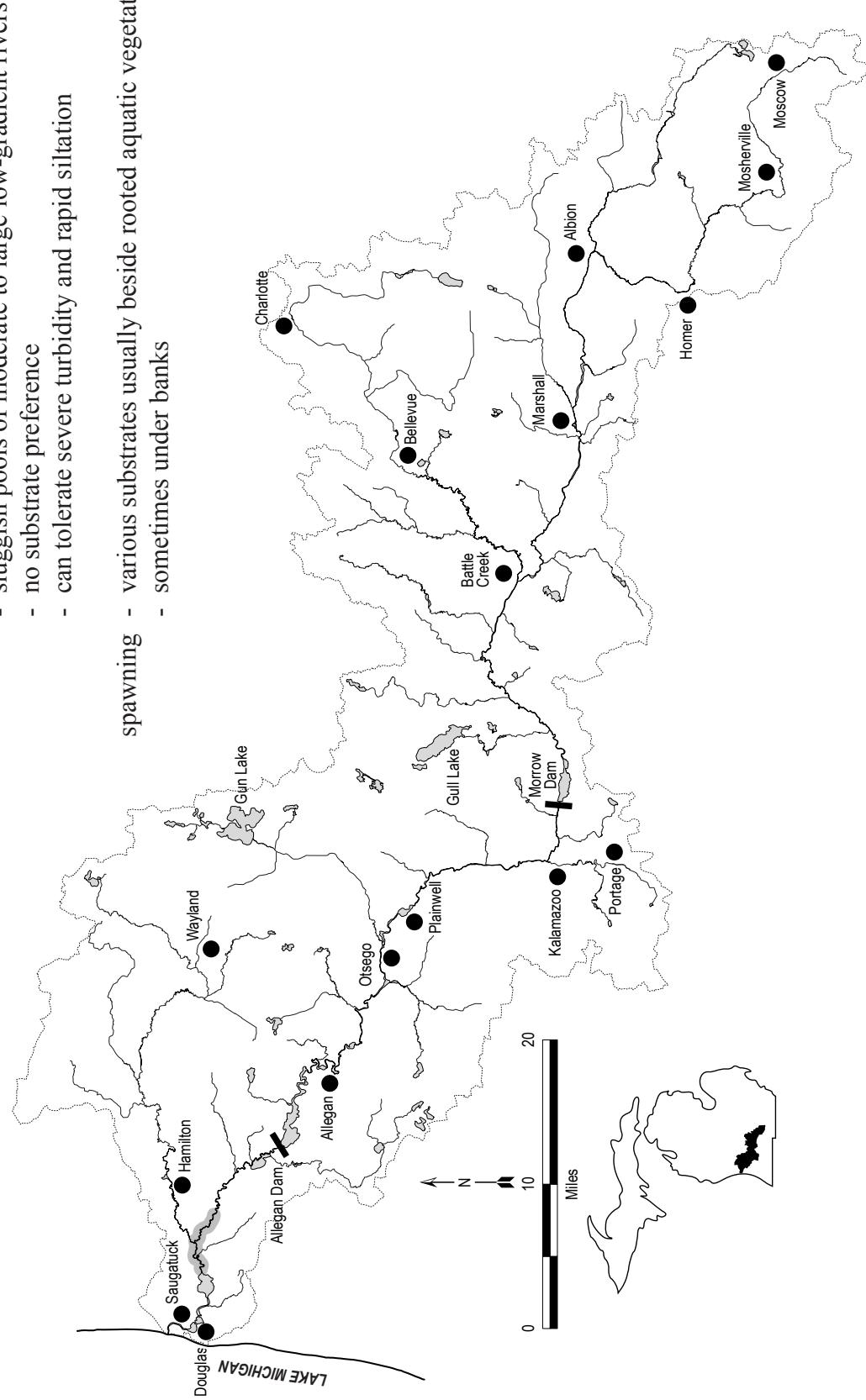
- spawning - nest in gravelly sand to marl and soft mud substrates
- emergent vegetation
  - quiet shallow bays; no current



**White crappie (*Pomoxis annularis*)**

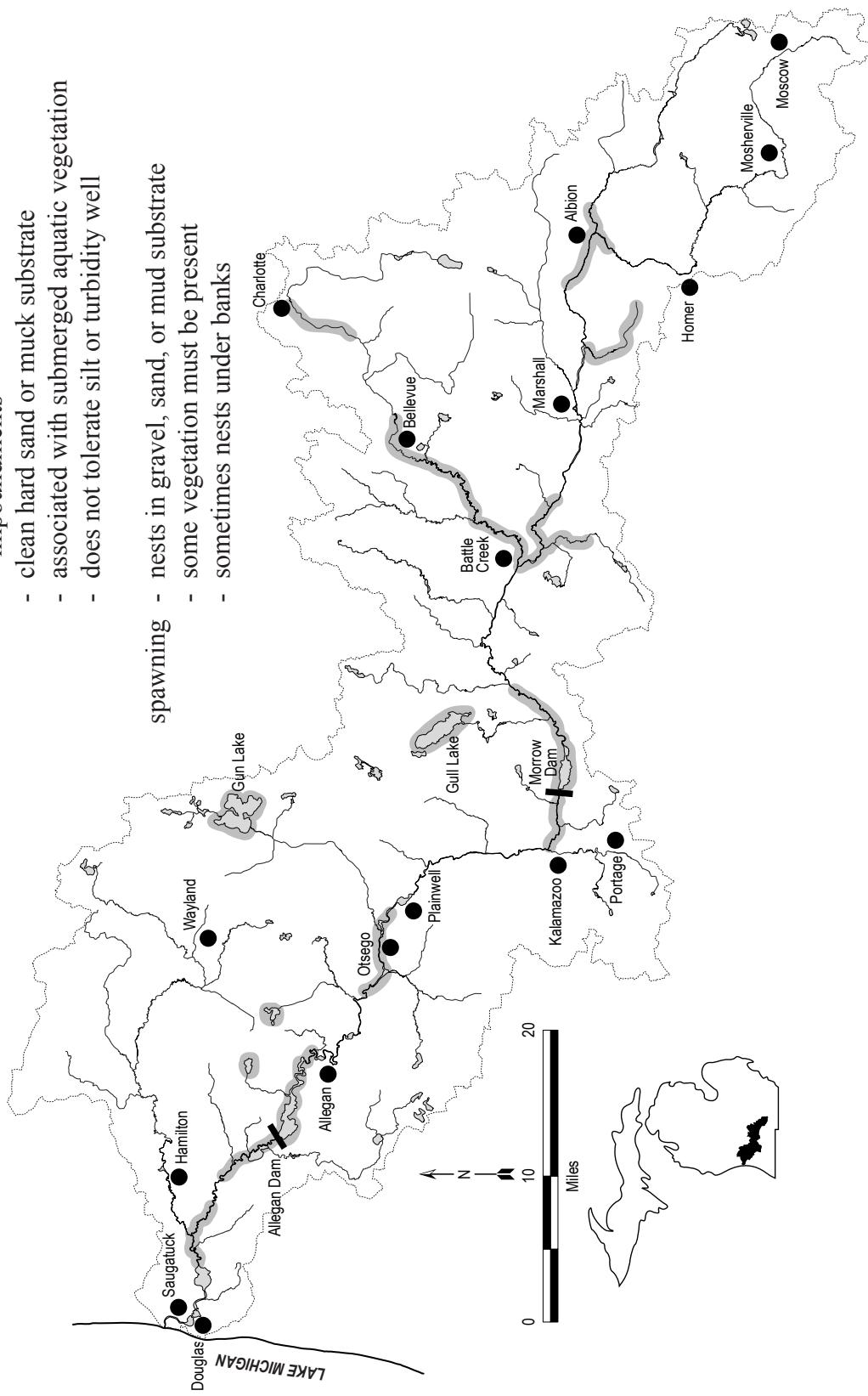
**Habitat:**

- feeding - lakes and impoundments >5 acres
- sluggish pools of moderate to large low-gradient rivers
  - no substrate preference
  - can tolerate severe turbidity and rapid siltation
- spawning - various substrates usually beside rooted aquatic vegetation
- sometimes under banks



**Black crappie (*Pomoxis nigromaculatus*)**

- Habitat:**
- feeding
    - larger clear non-silty low-gradient rivers; also in lakes and impoundments
    - clean hard sand or muck substrate
    - associated with submerged aquatic vegetation
    - does not tolerate silt or turbidity well
  
  - spawning
    - nests in gravel, sand, or mud substrate
    - some vegetation must be present
    - sometimes nests under banks

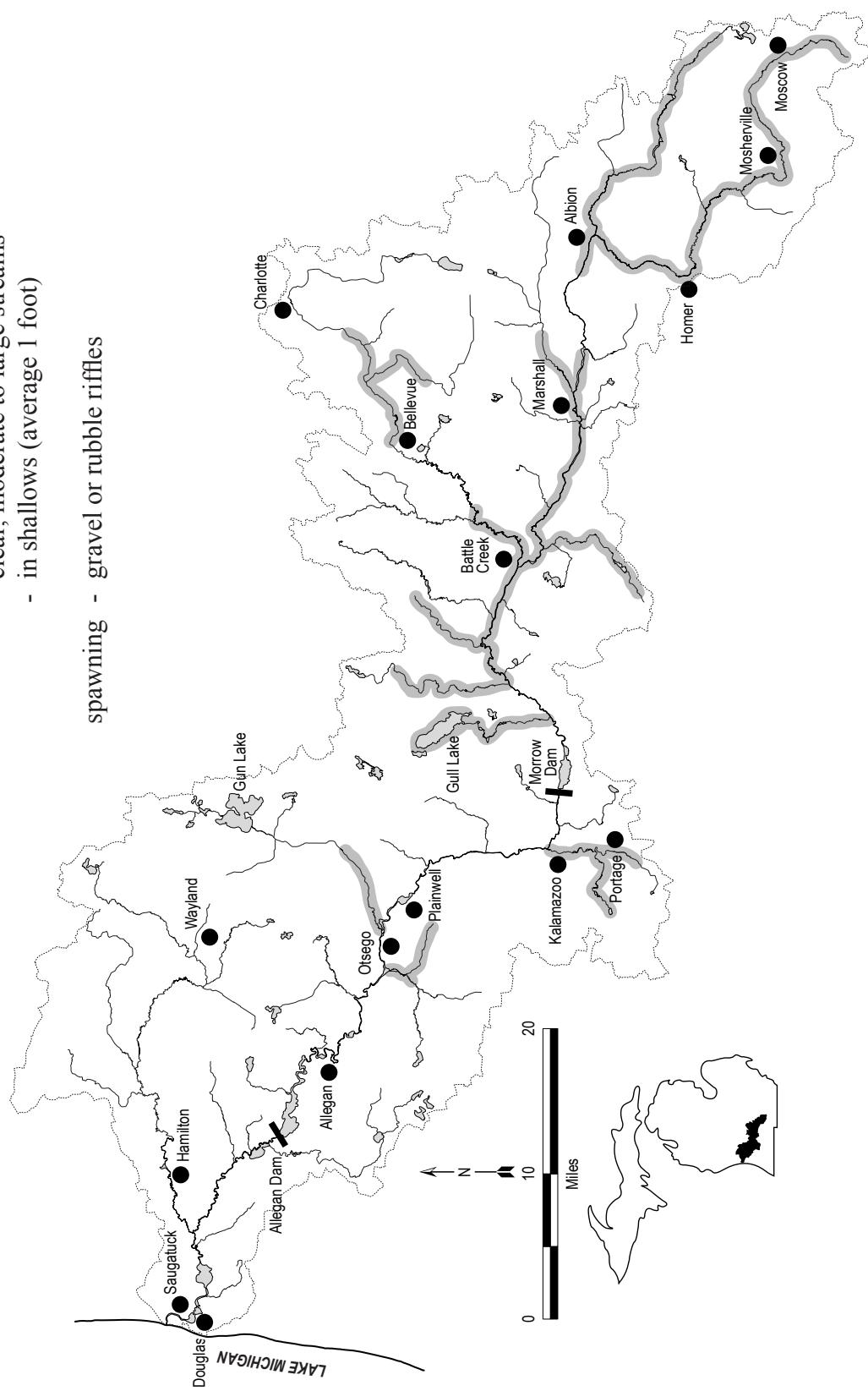


Rainbow darter (*Etheostoma caeruleum*)

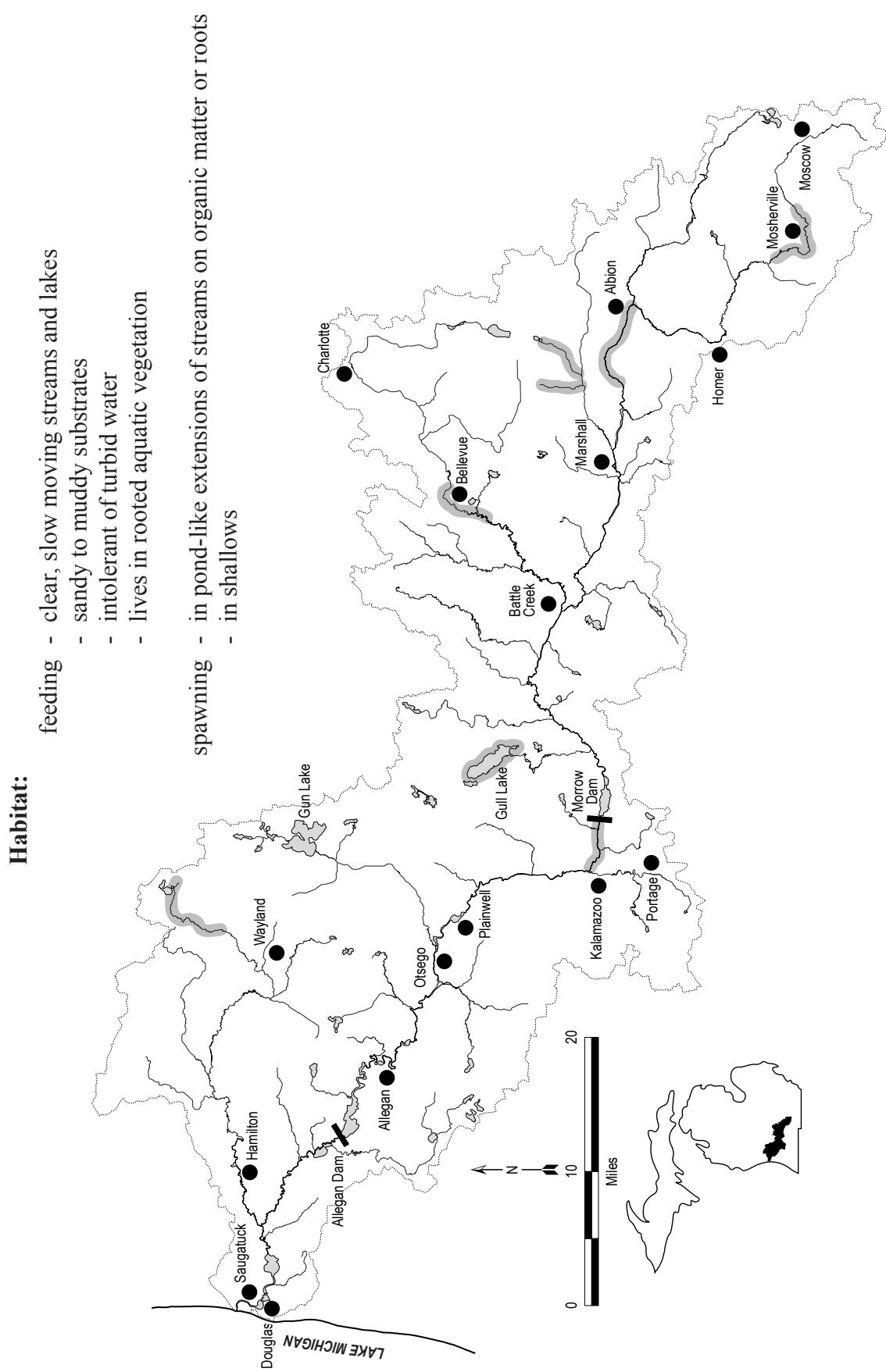
**Habitat:**

- feeding - gravelly high gradient riffles  
- clear, moderate to large streams  
- in shallows (average 1 foot)

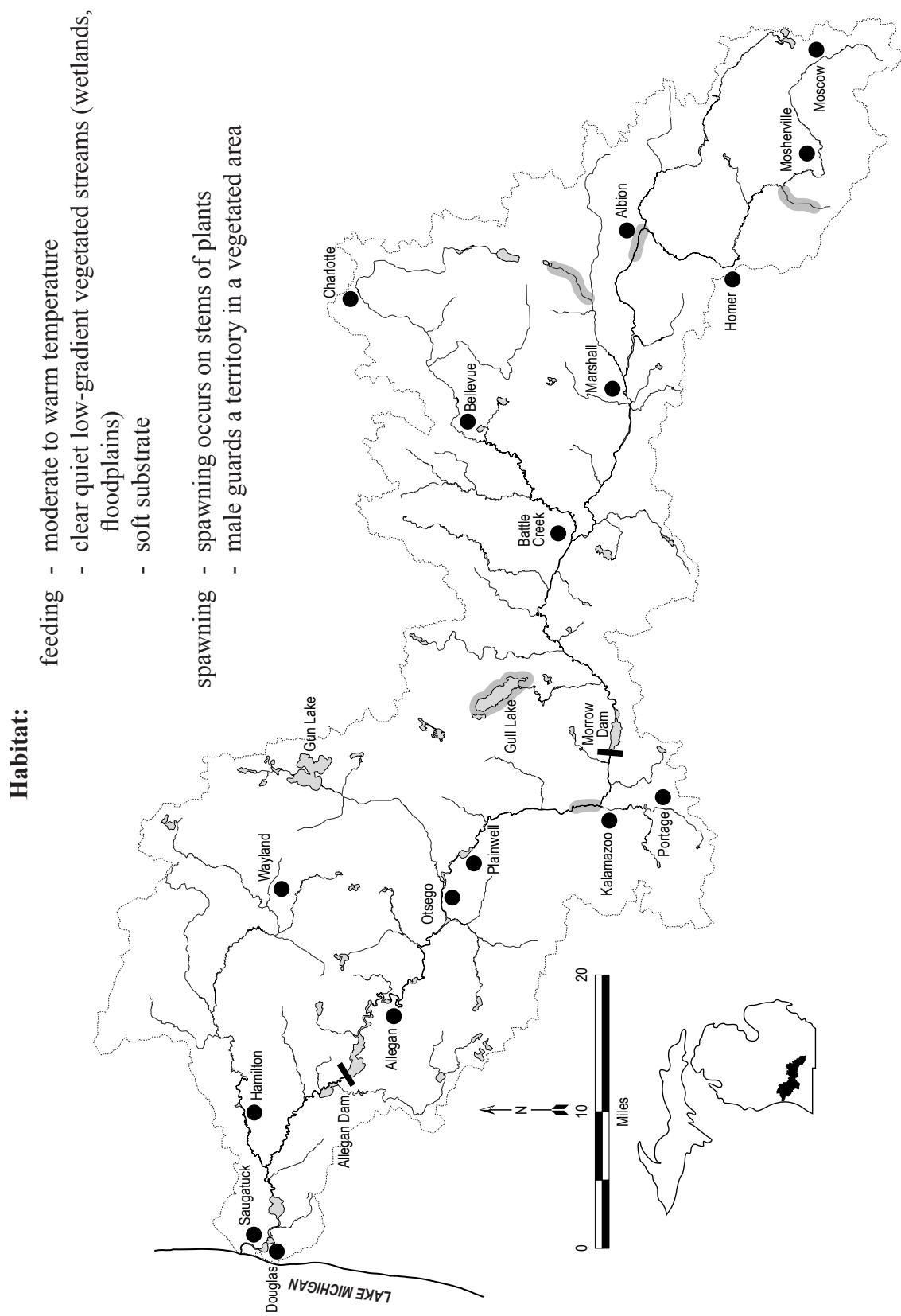
spawning - gravel or rubble riffles



### Iowa darter (*Etheostoma exile*)



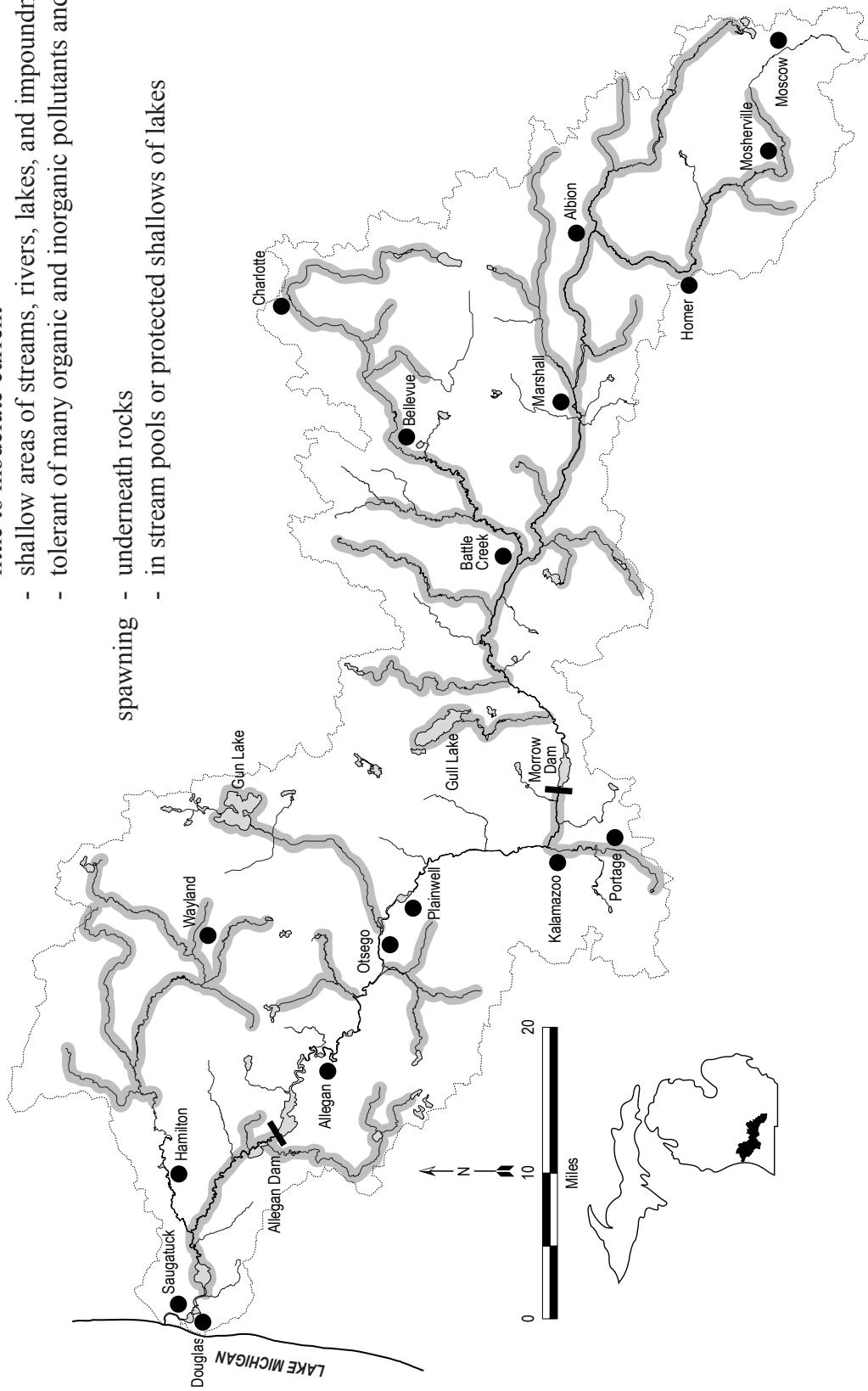
**Least darter (*Etheostoma micropurca*)**



### Johnny darter (*Etheostoma nigrum*)

#### Habitat:

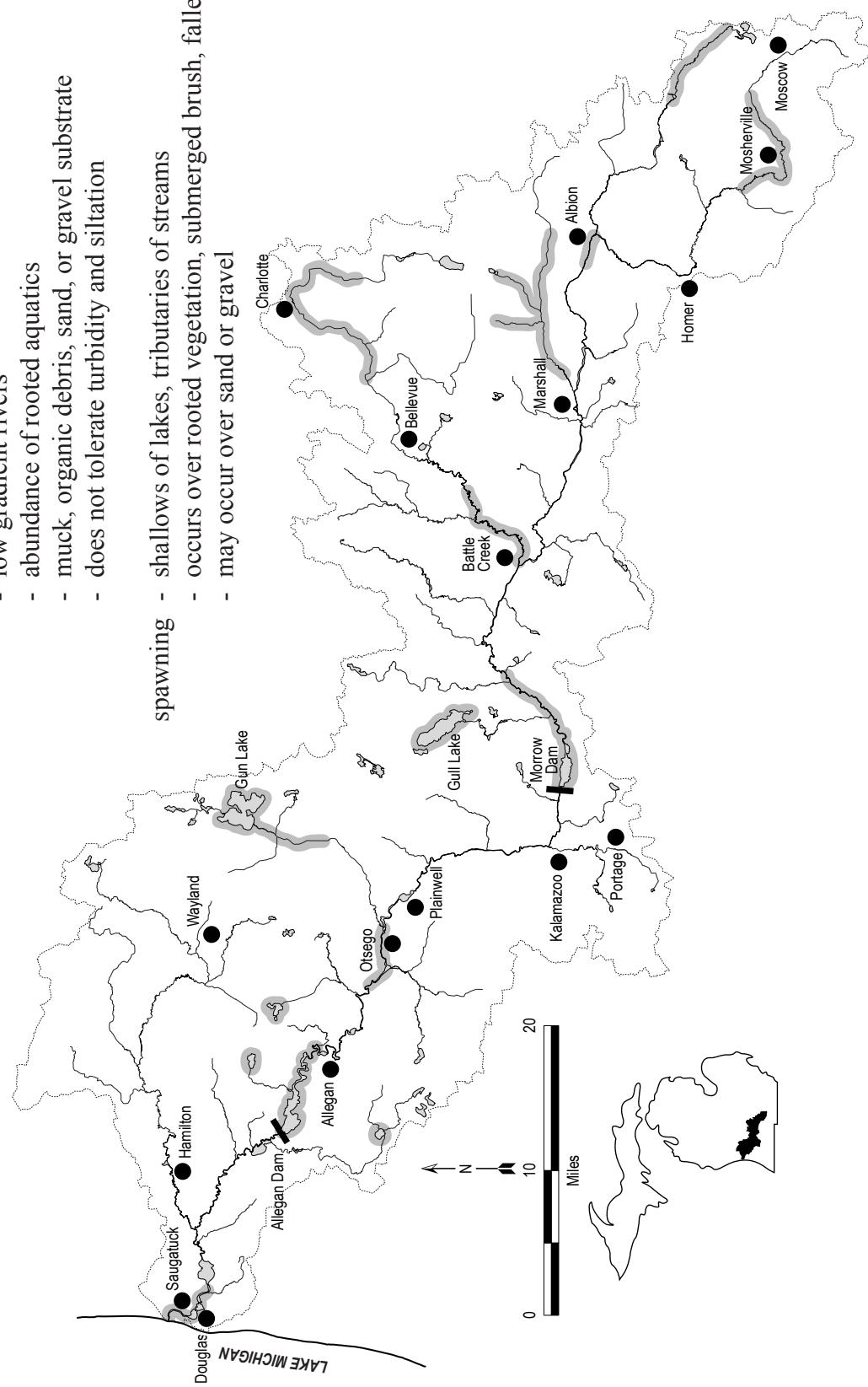
- feeding - sand and silt substrate  
- little to moderate current  
- shallow areas of streams, rivers, lakes, and impoundments  
- tolerant of many organic and inorganic pollutants and turbidity
- spawning - underneath rocks  
- in stream pools or protected shallows of lakes



**Yellow perch (*Perca flavescens*)**

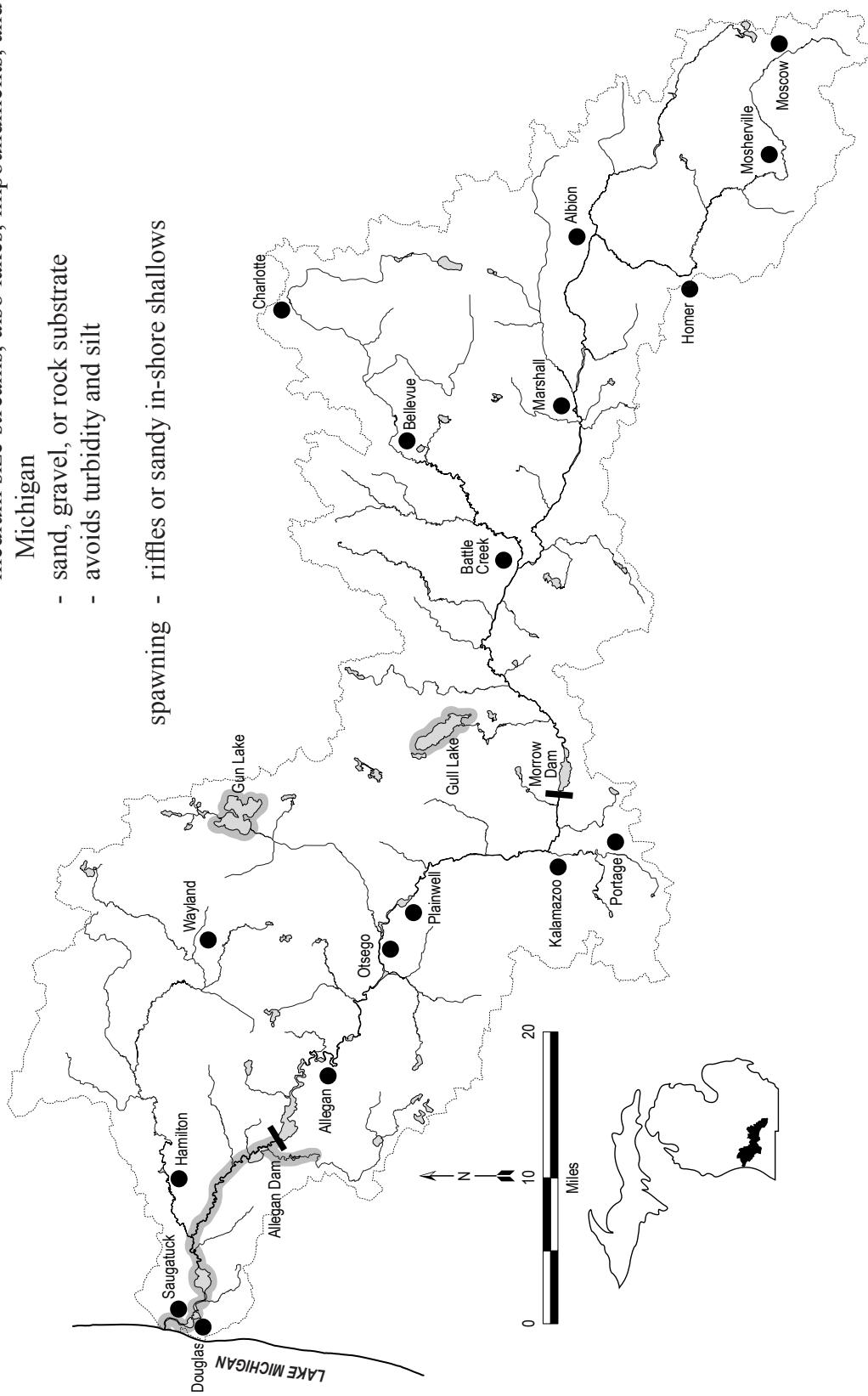
**Habitat:**

- feeding** - clear lakes and impoundments; also Lake Michigan
- low gradient rivers
  - abundance of rooted aquatics
  - muck, organic debris, sand, or gravel substrate
  - does not tolerate turbidity and siltation
- spawning** - shallows of lakes, tributaries of streams
- occurs over rooted vegetation, submerged brush, fallen trees
  - may occur over sand or gravel



**Northern logperch (*Percina caprodes semifasciata*)**

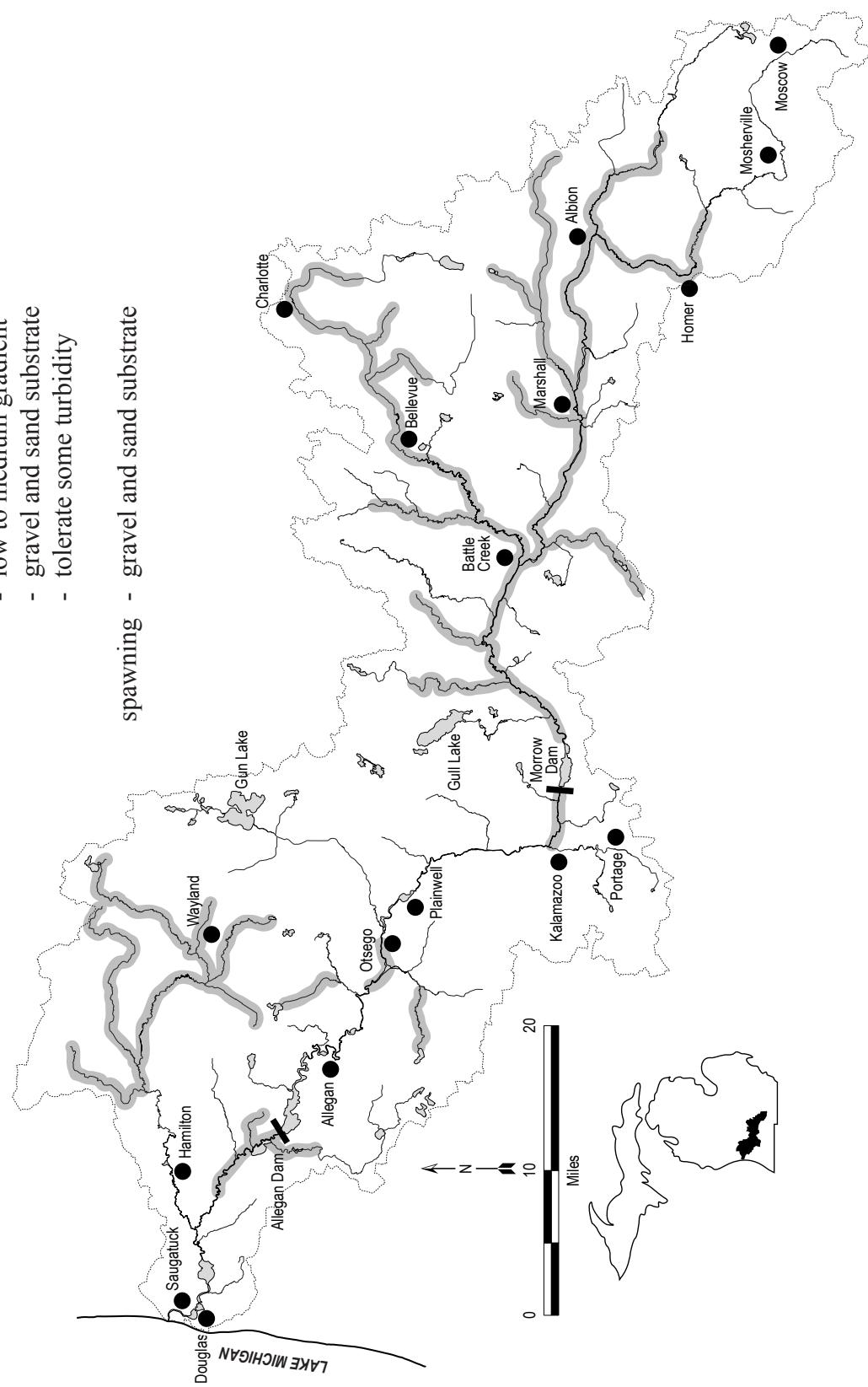
- Habitat:**
- feeding
    - gravel riffles, deeper slower sections of rivers
    - medium size streams; also lakes, impoundments, and Lake Michigan
    - sand, gravel, or rock substrate
    - avoids turbidity and silt
  - spawning
    - riffles or sandy in-shore shallows



**Blackside darter (*Percina maculata*)**

**Habitat:**

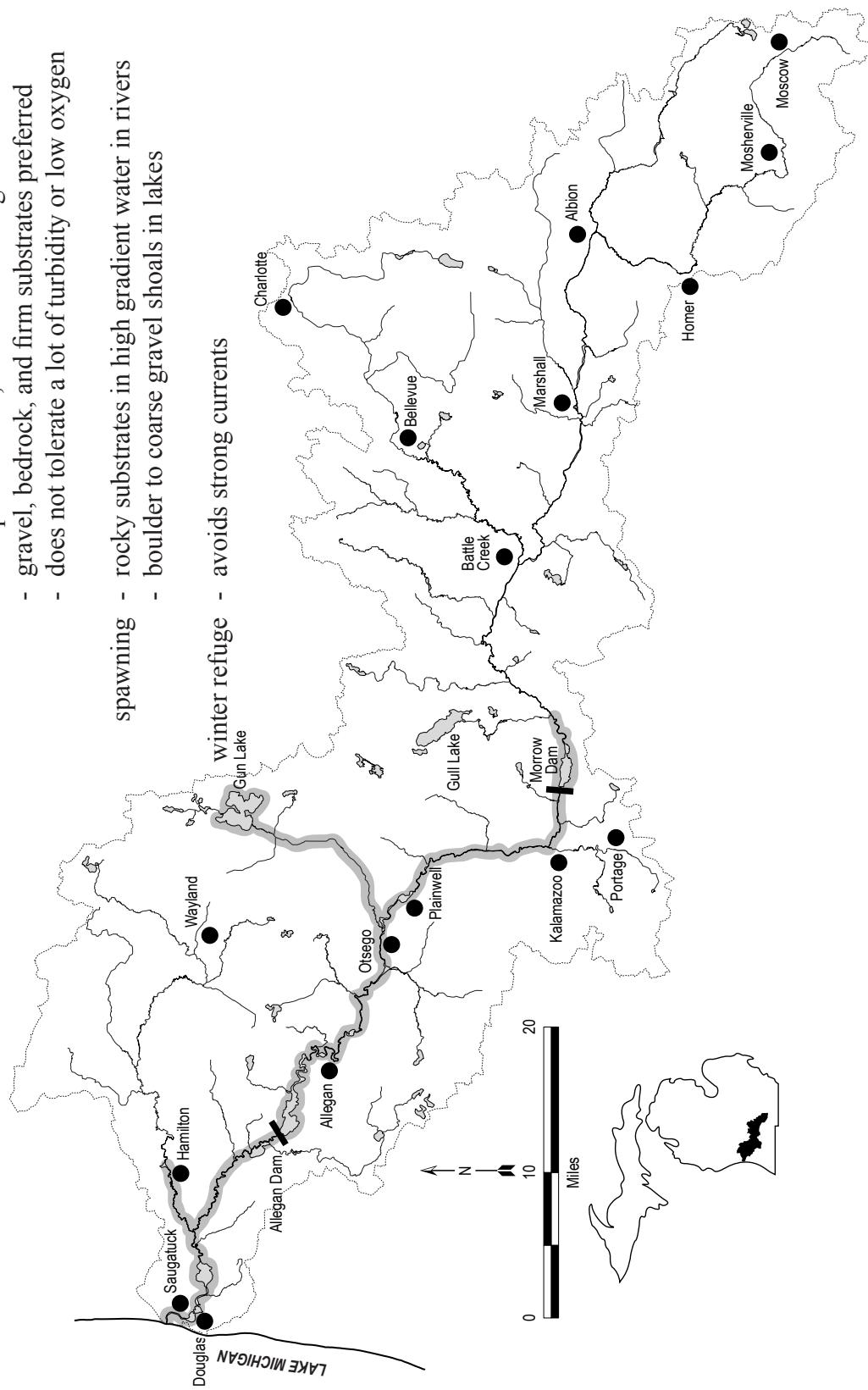
- feeding - small to medium streams  
- low to medium gradient  
- gravel and sand substrate  
- tolerate some turbidity
- spawning - gravel and sand substrate



### Walleye (*Sander vitreus*)

#### Habitat:

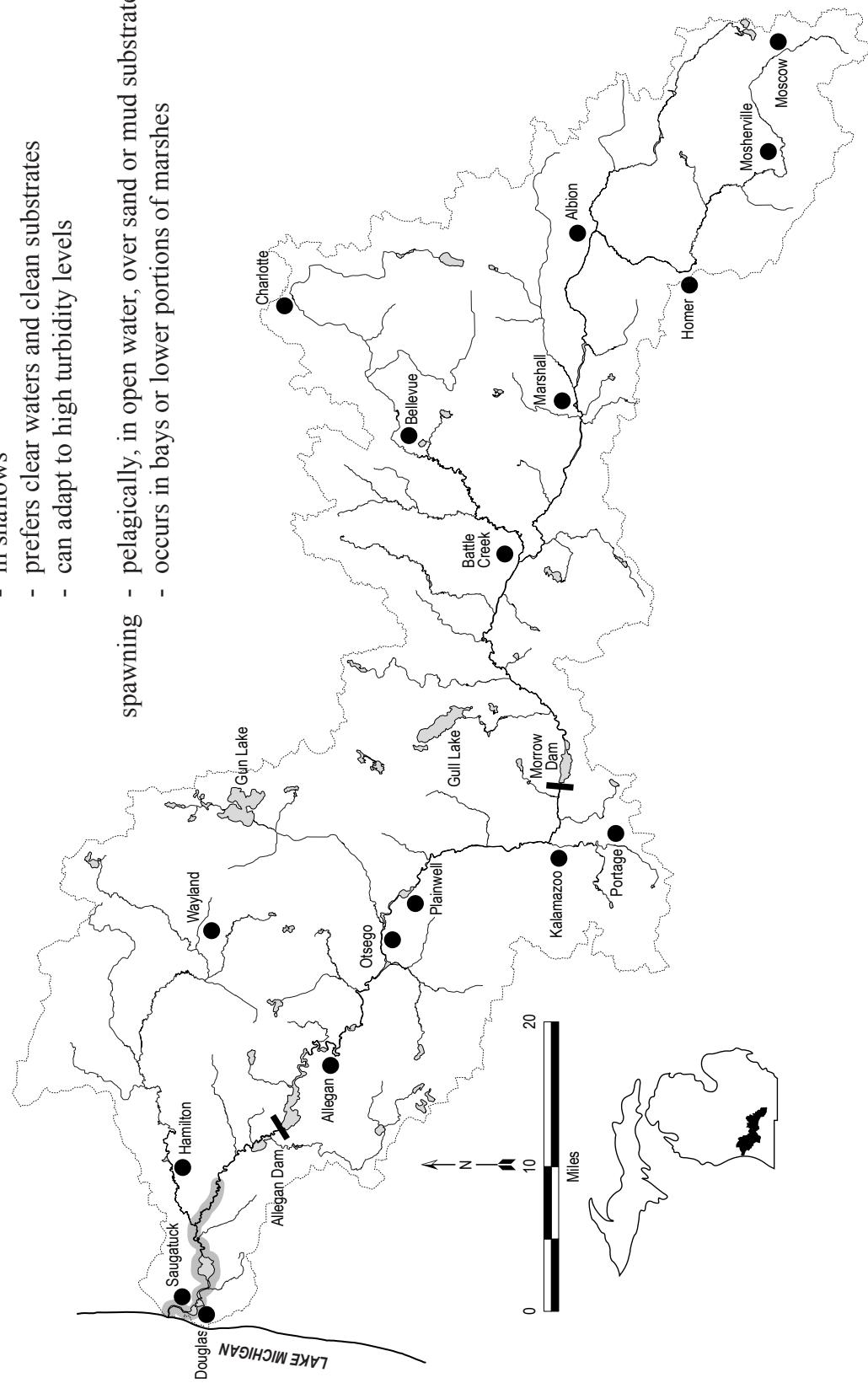
- feeding - larger, deeper streams and in large, shallow, turbid lakes and impoundments; also Lake Michigan
- gravel, bedrock, and firm substrates preferred
  - does not tolerate a lot of turbidity or low oxygen
- spawning - rocky substrates in high gradient water in rivers
- boulder to coarse gravel shoals in lakes
- winter refuge - avoids strong currents



Freshwater drum (*Aplodinotus grunniens*)

**Habitat:**

- feeding - deeper pools of rivers and Lake Michigan
- in shallows
  - prefers clear waters and clean substrates
  - can adapt to high turbidity levels
- spawning - pelagically, in open water, over sand or mud substrate
- occurs in bays or lower portions of marshes



**Round goby (*Neogobius melanostomus*) - non-native species**

**Habitat:**

feeding - rock,cobble,riprap, and vegetate areas of rivers and lakes  
- young found over sand substrate

spawning - rocky substrate with large interstitial spaces

winter refuge - rocky substrate with large interstitial spaces  
- deep water

